

Work Order ID 144748

May 05, 2016 9:21:57 AM

144748

Page 1

Item ID: D2857-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Hinge Bracket

Start Date: 5/9/2016 Start Qty: 18.00

18

Cust Item ID:

Required Date: 5/16/2016 Req'd Qty: 18.00

18

Customer:

Reference:

Approvals:

Process Plan: MLSDate: MAY 05 2016

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2857	Rev C								

100

0.00

100

BAND SAW

Bandsaw

Memo

Jeaspa Bandsaw

Cut blanks 4.425"

113.5

110

0.12

110

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

HAAS CNC vertical machine #1

1-Machine per folio FA940

FOLIO REV: CDWG REV: C

2-Deburr any rough edges

120

0.00

120

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

Quality Control

0.18

18 0 16-06-16

14 0 16-06-17

18 0 16-06-17

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 144748

May 05, 2016 9:21:57 AM

144748

Page 2

Item ID: D2857-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Hinge Bracket

Start Date: 5/9/2016 Start Qty: 18.00

18

Cust Item ID:

Required Date: 5/16/2016 Req'd Qty: 18.00

18

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

QC8- Inspect parts - second check

0.00

130

QC

Memo

0.36

Quality Control

B.e 16/06/18

18 0 9-89

140

Chemical Conversion Coat per QSI005 4.1

0.00

140

HandFinish

Memo

0.36

Hand Finishing

18 0 16/06/22

160

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

160

Powdercoat

Memo

0.18

Powder Coating

M 134631

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

1:45.
320°
2:15.

18 0 16-06-28. 09 34 00

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :	MRB (QS1042) Approval		
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 144748

May 05, 2016 9:21:57 AM

144748

Page 3

Item ID: D2857-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Hinge Bracket
Start Date: 5/9/2016 Start Qty: 18.00 ***18*** Cust Item ID:
Required Date: 5/16/2016 Req'd Qty: 18.00 ***18*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	QC3- Inspect Part Finish	0.00							
170						(18)			DAS 38 9-89
QC	Memo	0.18							JUN 29 2016
Quality Control									
180	Identify as per dwg & Stock Location: <u>Stop</u>	0.00							
180						18			DAS 6 9-89
Packaging	Memo	0.18							JUN 29 2016
Packaging									
190	QC21- Final Inspection - Work Order Release	0.00							
190									16/7/4
QC	Memo	1.80							
Quality Control									

Su 6/30/16

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval				
Description Work Order Deviation				Disposition				Completed By			
								Lead hand / Supervisor Approval Verification			
								QC / QA Coordinator Approval			
Root Cause				FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER : ☐											

Picklist Print

May 05, 2016 9:21:57 AM

Page 1

Work Order ID: 144748

144748

Parent Item: D2857-1

D2857-1

Parent Item Name: Hinge Bracket

Start Date: 5/9/2016

Required Date: 5/16/2016

Start Qty: 18.00

Required Qty: 18.00

Comments: IPP C00.06.22Removed P/O for powder coatEC
IPP D06.05.01Added level 8 EC IPP Rev:E
10.06.10 remove seq150 DD verf:JLM IPP Rev:F 11.01.06 as
per dwg revC DD verf:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B2.000X01.25 0		Purchased	No			100	f	36.6670	0.37	7.010527			

M6061T6B2 000X01 250

6061-T6 Bar 2.00 x 1.25

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
MAT	12.667	
m134191	0.667	
m134514	12	
MAT003	24	
m134058	12	
m134377	12	

4.
2.5

16-06-16

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process								
Misidentified ☐	☐ Past Due	OTHER : _____							

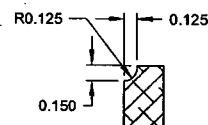
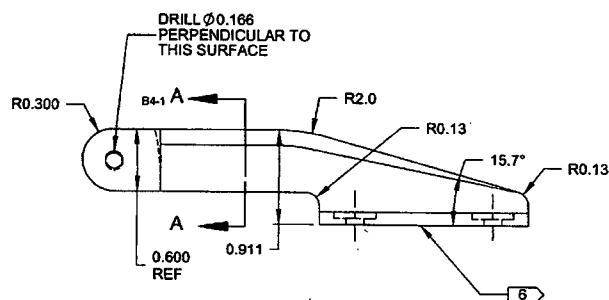
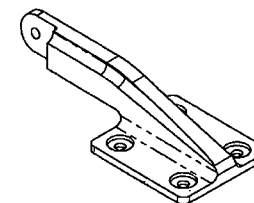
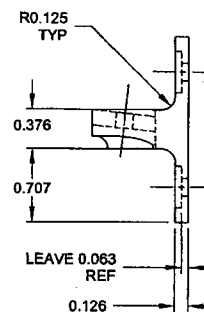
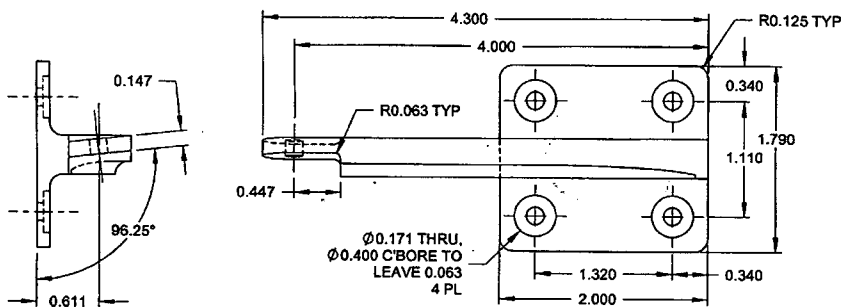
DART AEROSPACE LTD		Work Order:	144748
Description: Hinge Bracket		Part Number:	D2857-1
Inspection Dwg: D2857 Rev: C		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
4.300	+/-0.010	4.301	✓		Vern	
4.000	+/-0.010	4.001	✓			
0.340	+/-0.010	.340	✓			
1.110	+/-0.005	1.110	✓			
1.790	+/-0.010	1.790	✓			
1.320	+/-0.005	1.320	✓			
2.000	+/-0.010	2.000	✓			
0.340	+/-0.010	.340	✓			
0.447	+/-0.010	.449	✓			
Ø0.171	+0.005/-0.000	.172	✓		Gage Pin	
0.147	+/-0.010	.147	✓		Vern	
0.376	+/-0.010	.376	✓			
0.126	+/-0.010	.125	✓			
0.063	+/-0.010	.063	✓			
Ø0.166	+0.005/-0.000	.167	✓		Gage Pin	
0.911	+/-0.010	.912	✓		Vern	
0.600	+/-0.010	.600	✓			
0.125	+/-0.010	.125	✓			
0.150	+/-0.010	.150	✓			
		7				

Measured by: <i>PL 06-12</i>	Audited by: <i>Be</i> DAS 03 9-89	Preliminary Approval:
Date:	Date: 16/06/18	Date:

Rev	Date	Change	Revised by	Approved
A	04.06.15	New Issue	KJ/JLM	
B	07.04.20	Dimensions update per Dwg Rev B	KJ/JLM	
C	12.05.14	Dwg Rev updated	KJ	<i>[Signature]</i>



SECTION A-A

D2857-1 HINGE BRACKET

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 144718 M/S
16-05-05

RELEASED
2010-11-26

NOTES:

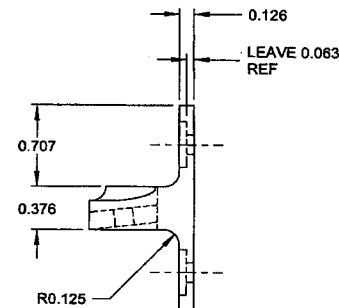
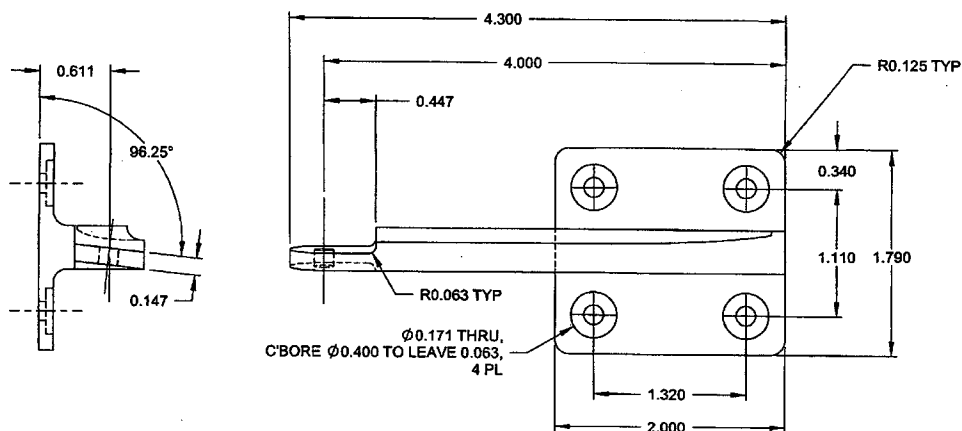
- 1) MATERIAL: 6061-T6 ALUMINUM BAR PER QQ-A-200/8 OR QQ-A-225/8 OR ASTM B211 OR ASTM B221 REF DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: P/N "D2857-1" PER DART QSI 044 6.1 (FINE POINT PERMANENT INK MARKER)
- 7) WEIGHT: 0.11 lbs

C	REFORMAT DWG. IDENTIFICATION BY MARKER WAS ENGRAVING (A8-1), REF PAR 10-040	CP	10.09.13
B	ADD THICKNESS, REDRAW W/ SOLIDWORKS	LE	06.08.28
A	NEW ISSUE	KE	98.12.14
REV.	DESCRIPTION	BY	DATE
DESIGN	KE		
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.09.13		

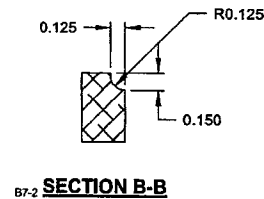
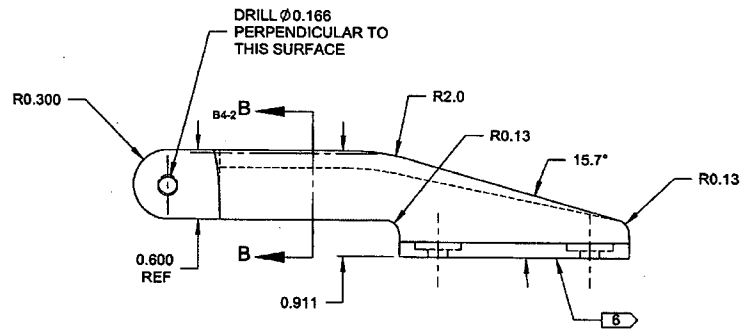
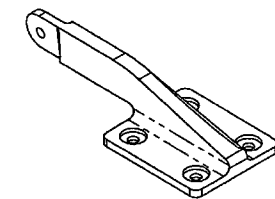
DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D2857
REV. C
SHEET 1 OF 2
TITLE HINGE BRACKET
SCALE NTS

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WITHOUT NOTICE
WORK ORDER
NO



D2857-2 HINGE BRACKET

- NOTES:**
- 1) MATERIAL: 6061-T6 ALUMINUM BAR PER QQ-A-200/8 OR QQ-A-225/8 OR ASTM B211 OR ASTM B221
REF DART SPEC M8061T6B
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: P/N "D2857-2" PER DART QSI 044 6.1 (FINE POINT PERMANENT INK MARKER)
 - 7) WEIGHT: 0.11 lbs

DESIGN	KE	DART AEROSPACE LTD	
DRAWN	97	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D2857	SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		HINGE BRACKET	NTS
DATE	10.09.13	COPYRIGHT © 1988 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

RELEASED
2010-11-26